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10/603,023	06/24/2003	Marc Weydert	DN2002105	2594

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THE GOODYEAR TIRE & RUBBER COMPANY  
INTELLECTUAL PROPERTY DEPARTMENT 823  
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EXAMINER

CHEUNG, WILLIAM K

ART UNIT PAPER NUMBER

1713

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/603,023  
Filing Date: June 24, 2003  
Appellant(s): WEYDERT ET AL.

**MAILED**  
NOV 28 2006  
**GROUP 1700**

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John D. DeLong  
(Registration No. 44,648)  
For Appellant

**SUPPLEMENTAL EXAMINER'S ANSWER**

This is in response to the appeal brief filed March 29, 2006 appealing from the Office action mailed December 14, 2005.

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**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,672,639	Corvasce et al.	9-1997
2003/0152758	Huynh-Tran et al.	8-2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corvasce et al. (U.S Patent 5,672,639) in view of Huynh-Tran et al. (US 2003/0152758).

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The prior art to Corvasce et al. relates to a rubber composition containing a (A) 100 parts by weight of at least one diene-based elastomer, (B) about 0.1 to about 120 phr of at least one reinforcing filler for said elastomer(s) comprised of at least one starch/plasticizer composite (Column 15, line 48-52). Regarding the claimed "tread" feature of claim 1, Corvasce et al. (col. 21-23, claims 47-86, particularly 67-86) clearly disclose using the disclosed tire having a tread comprising the rubber composition of Corvasce et al.

In regard to Claim 7, Corvasce et al. further disclose that the starch used in the starch/synthetic plasticizer is composed of amylose units and amylopectin units in a ratio of about 15/85 to about 35/65, and has a softening point according to ASTM No. D1228 in a range of about 180 °C to about 220 °C provided, however, that said starch/plasticizer composite has a softening point in a range of about 110 to about 160 °C according to ASTM No. D1228 (column 15, line 56-62).

In regard to Claim 8, Corvasce et al. disclose that the starch/synthetic plasticizer herein said plasticizer is a liquid at 23 °C. and is selected from at least one of poly(ethylenevinyl alcohol), cellulose acetate and plasticizers based, at least in part, upon diesters of dibasic organic acids and forms said starch/plasticizer composite having a softening point in a range of about 110 °C. to about 160 °C. when combined with said starch in a weight ratio in a range of about 1/1 to about 2/1 (column 16, line 34-41).

In regard to Claim 9, Corvasce et al. disclose that starch/synthetic plasticizer herein said plasticizer has a softening point of less than the said starch and less than 160 °C. and is selected from at least one of poly(ethylenevinyl alcohol), cellulose acetate and copolymers, and hydrolyzed copolymers, of ethylene-vinyl acetate copolymers having a vinyl acetate molar content of from about 5 to about 90, alternatively about 20 to about 70, percent, ethylene-glycidal acrylate copolymers and ethylene-maleic anhydride copolymers (column 17, line 7-15).

In regard to Claim 10, Corvasce et al. teach that diene based elastomer used in the rubber composition formulation is selected from at least one of homopolymers of isoprene and 1,3-butadiene and copolymers of isoprene and/or 1,3-butadiene with a aromatic vinyl compound selected from at least one of styrene and alpha-methylstyrene (column 17, line 50-55).

In regard to Claims 11 and 12, Corvasce et al. teach that the rubber reinforcing carbon black is used in conjunction with the starch composite in an amount of at least 5 and preferable at least 35 phr of carbon black (column 5, line 41-44) and, if silica is used as a reinforcement together with carbon black, the weight ratio of silica to carbon black is desirably in a weight ratio in a range of about 0.1/1 to about 10/1 (column 6, line 14-16).

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In regard to claim 16, the claimed glass transition temperature would be inherently possessed by the composition obviated by Corvasce et al. in view of Huynh-Tran et al.

The difference between the prior art and the present invention is the using of an adduct of maleic anhydride and polybutadiene in the rubber composition formulations. Corvasce et al. do not disclose that an adduct of maleic anhydride and polybutadiene can be used in making the rubber composition.

Corvasce et al. (col. 16, claim 6; col. 21, claim 52; col. 22, claim 72) disclose rubber composition, rubber tire, and rubber tire having a tread comprising polyester fibers. Since Huynh-Tran et al. (page 1, [0002]) provides an adhesion promoter comprising maleinized polybutadiene to synergistically improve adhesion of the rubber to polymeric fiber (page 2, [0022 and [0023]), it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the adduct of maleic anhydride and polybutadiene, as taught by Huynh-Tran et al., in Corvasce et als' rubber composition formulation because Huynh-Tran et al. have successfully exemplified incorporating a maleinized polybutadiene in a similar rubber composition with increased adhesion to polymeric fibers.

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As to claims 2-3, Huynh-Tran et al. use a maleinized polybutadiene with a  $M_n$  of 5100 (page 6, [0050]). Huynh-Tran et al.'s disclosure on page 6, [0050] and [0051] renders obvious the characteristic of the maleinized polybutadiene as instantly claimed.

As to claim 6, maleinized polybutadiene is used by Huynh-Tran et al. in amounts of 3, 5 or 10 wt% in the rubber composition (page 6, [0056]).

#### **(10) Response to Argument**

Appellant's arguments filed March 29, 2006 have been fully considered but they are not persuasive. Regarding the newly added "tread" feature of claim 1, Corvasce et al. (col. 21-23, claims 47-86, particularly 67-86) clearly disclose using the disclosed tire having a tread comprising the rubber composition of Corvasce et al. Appellants argue that there is insufficient motivation for combining the prior art of Corvasce et al. and Huynh-Tran et al. because Corvasce et al. is directed to a composition comprising starch/synthetic plasticizer. However, the examiner disagrees. Since there is no negative teaching in Corvasce et al. to teach one of ordinary skill in art not to incorporate the maleinized polybutadiene teachings of Huynh-Tran into Corvasce et al., the motivation set forth for the rejection of claims 1-12 and 16 is proper.

Regarding appellants' argument filed March 29, 2006 (pages 4-6), appellants argue that the specification contains "unexpected results" in "loss modulus" properties of



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the claimed rubber compositions at 50 °C and –10 °C, which indicate the criticality of the claimed “maleinized polybutadiene” feature. However, appellants fail to recognize that the argued “unexpected results” are based on comparative data that do not commensurate to the scope of the claimed invention and the prior art used for the instant rejection.

Appellants must recognize that the difference between Corvasce et al. and the claimed invention is that Corvasce et al. disclose the use of polybutadiene that has not been maleinized (column 17, line 50-55), while the appellants’ invention involves the use of maleinized polybutadiene in the rubber composition formulations. Because appellants’ argued “unexpected results” are based on the comparison of rubber compositions comprising “maleinized polybutadiene” with or without silane, or with or without any silane, starch, and maleinized polytadiene, appellants fail to include a comparative sample that represents the teachings of Corvasce et al., which is a rubber composition comprising starch, non-maleinized polybutadiene. To show the criticality of the claimed “maleinized polybutadiene” feature, appellants should include a comparative sample comprising “un-modified polybutadiene”, which is clearly taught in Corvasce et al. (column 17, line 50-55), Therefore, in view of the reasons set forth above, the argued specification fails to show the criticality of the claimed “maleinized polybutadiene” feature as claimed.

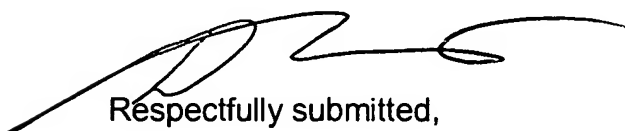
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Since Huynh-Tran et al. (page 1, [0002]) provides an adhesion promoter comprising maleinized polybutadiene to synergistically improve adhesion of the rubber to polymeric fiber (page 2, [0022 and [0023]], it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the adduct of maleic anhydride and polybutadiene, as taught by Huynh-Tran et al., in Corvasce et als' rubber composition formulation because Huynh-Tran et al. have successfully exemplified incorporating a maleinized polybutadiene in a similar rubber composition with increased adhesion to polymeric fibers.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.



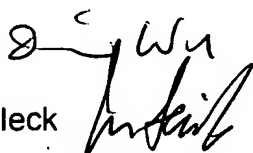
Respectfully submitted,

William K. Cheung, Ph. D.

Primary Examiner

Conferees:

David Wu



James Seidleck

